

What is claimed is:

1 1. A method for electronic tuning of the
2 frequency of the read oscillation to the frequency of the
3 stimulation oscillation in a Coriolis gyro (1'), wherein
4 - the resonator (2) of the Coriolis gyro (1') has a
5 disturbance force applied to it such that
6 a) the stimulation oscillation remains essentially
7 uninfluenced, and
8 b) the read oscillation is changed such that a read signal,
9 which represents the read oscillation, contains a
10 corresponding disturbance component, wherein
11 - the frequency of the read oscillation is controlled such
12 that the magnitude of the disturbance component, which is
13 contained in the read signal, is as small as possible.

1 2. The method as claimed in claim 1,
2 characterized in that the disturbance force is produced by a
3 disturbance signal which is added to the respective
4 control/reset signals for control/compensation of the read
5 oscillation.

1 3. The method as claimed in claim 1 or 2,
2 characterized in that the disturbance signal is an
3 alternating signal.

1 4. The method as claimed in claim 3,
2 characterized in that the disturbance signal is at a fixed
3 disturbance frequency, and the disturbance component is
4 determined from the read signal by demodulation of the read
5 signal at the fixed disturbance frequency.

1 5. The method as claimed in claim 1 or 2,
2 characterized in that the disturbance signal is band-limited
3 noise, and the disturbance component is demodulated from the
4 read signal by correlation of the disturbance signal with
5 the read signal.

6 6. The method as claimed in one of claims 2 to 5,
7 characterized in that the disturbance signal is added to the
8 output signal from the rotation rate control loop, and the
9 disturbance component is determined from a signal which is
10 applied to a quadrature regulator (17) in the quadrature
11 control loop, or is emitted from it.

1 7. The method as claimed in one of claims 2 to 5,
2 characterized in that the disturbance signal is added to the
3 output signal from the quadrature control loop, and the
4 disturbance component is determined from a signal which is
5 applied to a rotation rate regulator (21) in the rotation
6 rate control loop, or is emitted from it.

1 8. The method as claimed in one of claims 2 to 5,
2 characterized in that the disturbance signal is added to the
3 output signal from the quadrature control loop, and the
4 disturbance component is determined from a signal which is
5 applied to a quadrature regulator (17) in the quadrature
6 control loop, or is emitted from it.

1 9. The method as claimed in one of claims 2 to 5,
2 characterized in that the disturbance signal is added to the
3 output signal from the rotation rate control loop, and the
4 disturbance component is determined from a signal which is
5 applied to a rotation rate regulator (21) in the rotation
6 rate control loop, or is emitted from it.

1 10. The method as claimed in one of the preceding
2 claims, characterized in that the frequency of the read
3 oscillation is controlled by controlling the intensity of an
4 electrical field in which a part of the resonator (2) of the
5 Coriolis gyro (1') oscillates.

1 11. A Coriolis gyro (1') which has a rotation
2 rate control loop and a quadrature control loop,
3 characterized by a device for electronic tuning of the
4 frequency of the read oscillation to the frequency of the
5 stimulation oscillation, having:
6 - a disturbance unit (26) which passes a disturbance signal
7 to the rotation rate control loop or to the quadrature
8 control loop,
9 - a disturbance signal detection unit (27), which determines
10 a disturbance component which is contained in a read signal
11 (which represents the read oscillation) and has been
12 produced by the disturbance signal, and
13 - a control unit (28), which controls the frequency of the
14 read oscillation such that the magnitude of the disturbance
15 component, which is contained in the read signal, is as
16 small as possible.

1 12. The Coriolis gyro (1') as claimed in claim
2 11, characterized in that the disturbance unit (26) passes
3 the disturbance signal to the rotation rate control loop,
4 and the disturbance signal detection unit (27) determines
5 the disturbance component from a signal which is applied to
6 a quadrature regulator (17) in the quadrature control loop,
7 or is emitted from it.

1 13. The Coriolis gyro (1') as claimed in claim
2 11, characterized in that the disturbance unit (26) passes
3 the disturbance signal to the quadrature control loop, and
4 the disturbance signal detection unit (27) determines the
5 disturbance component from a signal which is applied to a
6 rotation rate regulator (21) in the rotation rate control
7 loop, or is emitted from it.

1 14. The Coriolis gyro (1') as claimed in claim
2 11, characterized in that the disturbance unit (26) passes
3 the disturbance signal to the rotation rate control loop,
4 and the disturbance signal detection unit (27) determines
5 the disturbance component from a signal which is applied to
6 a rotation rate regulator (21) in the rotation rate control
7 loop, or is emitted from it.

1 15. The Coriolis gyro (1') as claimed in claim
2 11, characterized in that the disturbance unit (26) passes
3 the disturbance signal to the quadrature control loop, and
4 the disturbance signal detection unit (27) determines the
5 disturbance component from a signal which is applied to a
6 quadrature regulator (17) in the quadrature control loop, or
7 is emitted from it.

1 16. The Coriolis gyro (1') as claimed in one of
2 claims 11 to 15, characterized in that the disturbance
3 signal is an alternating signal at a fixed disturbance
4 frequency, and the device for electronic tuning of the read
5 oscillation frequency and stimulation oscillation frequency
6 has a demodulation unit (27), which demodulates the read
7 signal at the fixed disturbance frequency and thus
8 determines the disturbance component which is contained in
9 the read signal.